WE CLAIM:

1. A wireless biopotential sensor, comprising:

an adhesive strip having a lower surface for placement against the skin of a patient and an upper surface;

a pair of conductive electrodes applied to said adhesive strip;

a sensor substrate applied to said upper surface of said adhesive strip, said sensor substrate carrying first and second conductive contact pads placed in registry with said pair of conductive electrodes such that said contact pads are in electrical contact with said conductive electrodes;

an electronics module applied to said sensor substrate and in electrical contact with said contact pads, said electronics module comprising a power supply and electronics for generating a wireless signal containing biopotential signals detected by said pair of conductive electrodes.

2. The sensor of claim 1, wherein said adhesive strip comprises a flexible, double sided adhesive tape.

3. The sensor of claim 1 wherein said conductive electrodes comprises a pair of elongate strips of conductive material wrapped around said adhesive strip and separated from each other by a distance W.

4. The sensor of claim 1, further comprising a flexible protective tape applied to said lower surface of said adhesive strip.

5. The sensor of claim 1, further comprising a reference voltage electrode supplying a reference voltage to said electronics module, wherein said reference voltage electrode is positioned at the end of a flexible strip attached to said sensor substrate.

6. The sensor of claim 5, wherein said flexible strip further comprises an adhesive material for connecting said end of said flexible strip to the patient.

7. The sensor of claim 1, wherein said sensor is adapted for measuring an electromyography signal from a human patient.

8. An electromyography signal acquisition system comprising a plurality of bio-potential sensors as recited in claim 1, and further comprising a base unit for receiving said wireless signals from said bio-potential sensors.

9. The sensor of claim 1, further comprising a DIP switch for enabling a user of said sensor to select and identification number for said sensor, wherein the identification number selected by said user with said DIP switch is encoded with said wireless signal.

10. In a bio-potential signal acquisition sensor adapted for acquiring a signal from a patient's body and including an electronics module, the improvement comprising:

an elongate flexible strip connected to said sensor, said flexible strip carrying a conductor having a first end electrically connected to said electronics module in said sensor and a second end connected to an electrode for placement on said patient's body, said conductor supplying a reference voltage to said electronics module.

11. The improvement of claim 10, wherein said second end of said flexible strip further comprises an adhesive material for adhering said second end to said patient's body.

12. In a bio-potential signal acquisition sensor adapted for acquiring a signal from a patient's body and including an electronics module, the improvement comprising:

an arrangement of first and second electrodes for acquiring said signal, said electrodes comprising elongate strips of conductive material wrapped around an adhesive material and separated from each other by a distance W, whereby said conductive strips may be unwrapped and repositioned on said adhesive material to thereby change the separation distance W between said strips.

13. The improvement of claim 12, wherein a protective membrane is applied to said adhesive material to protect said strips, and wherein said protective membrane is removed prior to use of said sensor.

14. The improvement of claim 12, wherein said adhesive material comprises a flexible double-sided adhesive tape.

15. The improvement of claim 12, wherein voltages acquired by said first and second strips are added together before being digitized by said electronics module.

16. A wireless electromyography (EMG) system, comprising

a base unit supplying EMG signals to a monitor;

a plurality of wireless electrodes for acquiring EMG signals from a patient, each of said electrodes comprising an electronics module converting EMG signals to digital form and an RF transceiver for transmitting RF wireless data corresponding to said EMG signals to said base unit and receiving RF wireless commands from said base unit;

each of said wireless electrodes further comprising a means for encoding unique identification information associated with said wireless electrodes;

a means for organizing said digital form of said EMG signals into packets for appending said encoded identification information to said packets; and

a buffer for storing EMG digital data containing said encoded identification number prior to transmission by said RF transceiver to said base unit.

17. The system of claim 16, wherein said unique identification information comprises a serial number associated with said sensor and a user-selected identification number, said identification number selected on said sensor by means of a manually operated switch.

18. The system of claim 16, wherein said wireless electrodes further comprise:

an adhesive strip having a lower surface for placement against the skin of a patient and an upper surface;

a pair of conductive electrodes applied to said adhesive strip;

a sensor substrate applied to said upper surface of said adhesive strip, said sensor substrate carrying first and second conductive contact pads placed in registry with said pair of conductive electrodes such that said contact pads are in electrical contact with said conductive electrodes;

wherein said electronics module is applied to said sensor substrate and in electrical contact with said contact pads.

19. The system of claim 18, wherein said adhesive strip comprises a flexible, double sided adhesive tape.

20. The system of claim 18, wherein said conductive electrodes comprises a pair of elongate strips of conductive material wrapped around said adhesive strip and separated from each other by a distance W.

21. The system of claim 18, further comprising a flexible protective tape applied to said lower surface of said adhesive strip.

22. The system of claim 18, further comprising a reference voltage electrode supplying a reference voltage to said electronics module, wherein said reference voltage electrode is positioned at the end of a flexible strip attached to said sensor substrate.

23. The system of claim 22, wherein said flexible strip further comprises an adhesive material for connecting said end of said flexible strip to the patient.